

REMARKS

The Office Action dated June 29, 2004 and the Advisory Action dated December 29, 2004 have been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 2, 4, 8, 11, and 13 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added and no new issues are raised which require further consideration or search. Claims 2-13 are currently pending in the application and are respectfully submitted for consideration.

Claims 1-3 and 5-13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Suonvieri (U.S. Patent No. 5,715,245) in view of Hoffpauir (S.I.R. Number H1,918). The Office Action took the position that Suonvieri disclosed all of the elements of claims 1-3 and 5-13, except for a network management system that is operatively interconnected by means of telecommunication connections comprising traffic channels and control channels. The Office Action then relied on Hoffpauir to cure this deficiency in Suonvieri. Claim 1 was canceled in the response filed on October 25, 2004. It is respectfully submitted that claims 2-13 recite subject matter which is neither disclosed nor suggested in the cited prior art.

Claim 2, upon which claims 3-10 are dependent, recites a method of connecting network elements to a radio system comprising one or more network elements, a base station controller and a network management system that are operatively interconnected by means of telecommunication connections including traffic channels and control

channels. Furthermore, system information between the network elements is transmitted in frames that are divided into time slots, and in which system the base station controller controls one or more network elements, and network element identification information has been fed into a network element to be installed, and in which method the network element is physically connected to the system by means of the telecommunication connections. In frames used by the base station controller for communication with the network elements, unused consecutive time slots of the frames are divided into one or more groups, and each group having one time slot within the group used as a bi-directional communication channel as regards time slot allocation from said group. The claim also recites predetermining identification information for the base station controller about network elements allowed to be connected thereto. After being physically installed, the network element to be installed searches the frames received by means of the telecommunication connections for the bi-directional communication control channels of the groups and identifies free groups by means of the bi-directional communication channels found. The network element transmitting over the bi-directional communication channel of the group its identification information and hardware information to the base station controller comparing the identification information with the identification information about the allowed network elements. When the identification information is allowed, accepting the network element, and the base station controller allocates from the group necessary time slots for the use of communication between the network element and the base station controller and informs the network

element of the allocated time slots over the bi-directional communication control channel, and the allocated time slots are branched by software through the telecommunication connections to the network element.

Claim 11, upon which claims 12 and 13 are dependent, recites a radio system comprising one or more network elements, a base station controller and a network management system that are operatively interconnected by means of telecommunication connections comprising traffic channels and control channels. The system information between the network elements is transmitted in frames that are divided into time slots, and the base station controller controls one or more network elements that comprise network element identification information. In frames arranged to be used by the base station controller for communication with the network elements, unused consecutive time slots of the frames are divided into one or more groups, and each group having one time slot within the group used as a bi-directional communication channel as regards time slot allocation from said group. Claim 11 further recites predetermining identification information for the base station controller about network elements allowed to be connected to the base station controller. After being physically installed, the network element to be installed is arranged to search the frames received by means of the telecommunication connections for the bi-directional communication channels of the groups and to identify free groups by means of the bi-directional communication channels found. The network element is arranged to transmit over the bi-directional communication channel of the group its identification information and hardware

information to the base station controller which is arranged to compare the identification information with the identification information about the allowed network elements, and when the identification information is allowed, to accept the network element. The base station controller is arranged to allocate from the group necessary time slots for the use of communication between the network element and the base station controller and to inform the network element of the allocated time slots.

As will be discussed below, Suonvieri and Hoffpauir, whether viewed alone or in combination, fail to disclose or suggest the elements of the claims, and therefore fail to provide the features discussed above.

Suonvieri discloses data transmission from a controller to successive base stations linked in series. More specifically, Suonvieri teaches a method to automate and facilitate the setting up or configuration of the structure of the data transmission network between the base station and the base station controller or switching center. Configuration data indicating in which timeslots of the frame the useful data intended for the network element is carried is transmitted to the network element in a predetermined timeslot of the frame. The base stations look for configuration data intended for them in the same predetermined time slot, and in the base station network, a preceding base station places the configuration data intended for the following base station in that same predetermined time slot.

Hoffpauir discloses an integrated authentication center and method for authentication in a wireless telecommunications network. The integrated authentication

center includes an application process, a home location register, and an authentication center. The method disclosed in Hoffpauir includes the steps of receiving a request from a subscriber for service and requesting approval from a home location register to provide service to the subscriber.

Applicants respectfully submit that Suonvieri and Hoffpauir, whether viewed alone or in combination, fail to disclose or suggest all of the elements of independent claims 2 and 11. Specifically, Applicants submit that the combination of Suonvieri and Hoffpauir fails to disclose or suggest the limitation of “each group having one time slot within the group used as a bi-directional communication channel as regards time slot allocation from said group,” as recited in claims 2 and 11. The Office Action alleges that Suonvieri discloses dividing unused time slots into transmission groups and that each transmission group comprises one time slot used for allocating time slots from the group. Applicants respectfully disagree and submit that Suonvieri fails to disclose such an element.

According to Suonvieri, the frame comprises time slots 306 to 308 illustrated in Figure 3 and time slots 306 and 403 illustrated in Figure 4, which are used for configuration purposes. In these time slots, the base station controller (BSC) informs each base station about the time slots reserved for the respective base station. For example, time slot 306, in Figures 3 and 4 of Suonvieri, is the time slot used to inform base station BTS3 about the time slots reserved for that base station. As a result, BSC transmits data in that time slot, and base stations do not transmit data in that time slot.

Furthermore, the time slots are placed in the end of the frame or in another predetermined fixed place (Suonvieri, Column 4, line 39 – Column 5, line 6). Therefore, each base station knows beforehand where the channel used for transmitting configuration data is located. There is no need for a base station to search for the control channels of the groups from frames received by means of the telecommunication connections and no need to identify free groups by means of the channels found, as the location channel of the channel is already predetermined.

In the present invention, on the other hand, bi-directional communication time slots are provided within each group. The location of each time slot is unknown, so each base station must search for the time slots. When a channel has been found, a base station may transmit a signal to BSC using the channel. As such, the present invention provides more flexibility, as there is no need to determine locations of configuration time slots and the location of the time slots reserved for each base station in advance.

Suonvieri, however, fails to disclose or suggest these elements of the present claims. Additionally, Hoffpauir also fails to disclose or suggest the elements of the claims discussed above. Thus, Suonvieri and Hoffpauir, whether viewed singly or combined fail to disclose or suggest all of the elements of claims 2 and 11.

Applicants note that claims 3 and 5-10, and 12-13 are dependent upon claims 2 and 11, respectively. Therefore, Applicants respectfully submit that claims 3, 5-10 and 12-13 should be allowable for at least their dependence upon claims 2 and 11, and for the specific limitations recited therein.

Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over Suonvieri in view of Hoffpauir and in further view of Poon (U.S. Patent No. 5,940,380). The Office Action took the position that the combination of Suonvieri and Hoffpauir discloses all of the elements of the claim, with the exception of a method wherein the network element selecting another base station controller group communication channel when the base station controller rejects the network element, the network element transmitting its identification information and hardware information over the communication channel to another base station controller, and the network element repeating this procedure until a base station controller accepts the network element. The Office Action relies on Poon to cure these deficiencies in the combination of Suonvieri and Hoffpauir. Applicants respectfully submit, however, that the combination of Suonvieri, Hoffpauir, and Poon fails to disclose or suggest the elements of the claims, and therefore fails to provide the advantages discussed above.

Poon discloses a method and arrangement relating to radio communication networks. Specifically, Poon teaches a method in which the communication unit ignores communication with the first base station in certain time slots assigned to the dedicated communication channel, and instead uses those time slots to receive signals from the second base station.

Applicants note that claim 4 is dependent upon claim 2. Additionally, Poon fails to cure the deficiencies in Suonvieri and Hoffpauir discussed above with respect to claim 2. Additionally, the combination of Suonvieri, Hoffpauir, and Poon fails to disclose or

suggest all of the elements of claim 4. Therefore, Applicants respectfully submit that claim 4 should be allowed for at least its dependence upon claim 2, and for the specific limitations recited therein.

Applicants respectfully submit that the cited prior art references of Suonvieri, Hoffpauir, and Poon, whether viewed alone or in combination, fail to disclose or suggest critical and important elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 2-13 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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